



## MEMORANDUM

DATE: November 5, 2008

TO: Division File

FROM: Lance Range, Illinois EPA, Office of Site Evaluation

SUBJECT: Water Runoff from the Zinc Oxide Pile at Chemetco

SITE NUMBER: 1198010003 – Madison County  
Hartford/Chemetco

*Lance Range*  
*5 Nov 2008*

Chemetco was a former secondary copper smelter operation positioned just south of the Village of Hartford, Madison County, Illinois. The former smelter property occupied over 230 acres of land, but operated on 41 acres located near the smelter operations. The company has filed for Chapter 7 bankruptcy and is currently being managed by a court appointed trustee. The property contains a foundry, tank house, dome building, DIS building, fines building, receiving building, laboratory, commercial offices, plant offices, the mobile shop, and some stacks which are in disrepair. The 41 acre property is currently fenced and is sealed by order of the Illinois Environmental Protection Agency (Illinois EPA).

Chemetco had the capabilities for producing copper cathodes from copper oxide ores or precipitates, its major function was recycling or secondary processing, of copper-bearing scrap and manufacturing residues. Much of the raw materials consisted of electrical devices or equipment or cable, but a certain percentage was composed of such items as skimmings, slags, turnings, grindings and other residues from foundries and factories, auto parts and building components. A premix consisting of the copper-bearing raw material and other ingredients were smelted in one of the furnaces in the first step of the process, producing black copper (containing small amounts of lead, tin and zinc). The black copper was further refined in the same type furnace utilizing blown oxygen, producing copper along with zinc oxide and a refining slag that was rich in lead and tin and contained some nickel.

The overland flow/flood draining from the Chemetco facility was witnessed during a reconnaissance visit on April 1, 2008. During the reconnaissance inspection on April 1, 2008, observations were made of surface water flowing from the zinc oxide bunker. The zinc oxide bunker is located in the northern portion of the fenced Chemetco site. Observations of the zinc oxide bunker show that the bunker is full with additional zinc oxide extending above the bunker walls. Surface water which would fall on the site would be allowed to either flow off of the pile to the ground outside the bunker or percolate through the zinc oxide material.

Surface water which may be allowed to percolate through the zinc oxide material may be escaping through cracks in the foundation of the zinc oxide bunker. If the bunker is water tight, then the zinc oxide material is saturated and surface water would overflow the bunker and pool on the outside of the bunker during any type of water percolation through the zinc oxide.

Once the surface water flows from the bunker, the surface water appears to flow south. The surface water was seen to the west of the Dome building and also inside of the Dome building. Once the surface water reaches the south end of the dome building, the surface water flows south west towards the Receiving building. Once the water is halfway between the Receiving building and the Foundry, the surface water flows south and then west between the Receiving building and the Commercial offices. Surface water continues to flow west to the drainage ditch located outside the perimeter fence of Chemetco. Water from the west side of the facility was flowing adjacent to the railroad tracks in a ditch. This ditch flowed south 0.16 miles and was directed to a culvert which went under the railroad tracks and Chemetco Lane. The water then continued to flow south along the roadside ditch of Illinois Highway Route 3 for 0.22 miles where the surface water reaches another culvert which directs the runoff Long Lake.

Also during the April 1, 2008 reconnaissance, Long Lake was witnessed to have a discernable flow. According to the United States Geological Survey Topographical map of the Wood River Quadrangle dated 1994; Long Lake begins to the southwest of the Chemetco facility. During the April 1, 2008 reconnaissance the area had received a substantial amount of rain. During the reconnaissance a visual observation was made that water was flowing in Long Lake at several points. The water flowing in Long Lake was flowing towards the east in the northern portion of Long Lake just to the south of the Chemetco facility. Water was observed flowing over the road which leads to the western most abandoned residence.

Another observation of flow was found near the residential homes found along Long Lake in the area identified on the topographical map as Brooks. While observing Long Lake, slow swirls were noticed along the edge of Long Lake with the residence yards indicating that the water in Long Lake was flowing south.

One final observation of flow was made at the southern end of Long Lake near the township building where the Long Lake turns west to flow into the levee channel. The water of Long Lake was seen flowing slowly west under a homemade bridge constructed from discarded telephone poles.